**Module 7 and 8 Assignment**

1. Try Test-Connection and nslookup commands for below websites

[www.google.com](http://www.google.com)

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www.facebook.com

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www.amazon.com

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www.github.com

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www.cisco.com

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2. Use Wireshark to capture and analyze DNS, TCP, UDP traffic and packet header, packet flow, options and flags

DNS:

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TCP:

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UDP:

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3. Explore traceroute/tracert for different websites eg:google.com and analyse the parameters in the output and explore different options for traceroute command

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5. Set up trunk ports between switches and try ping between different VLANS.

NETWORK TOPOLOGY:

A diagram of a computer network

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SWITCH 1 - TRUNK PORT CONFGURATION

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SWITCH 2 - TRUNK PORT CONFIGURATION

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PING:

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6. Change the native VLAN on a trunk port. Test for VLAN mismatches and troubleshoot.

NETWORK TOPOPLOGY:

A diagram of a switch

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NATIVE VLAN 99 CONFIGURATIONS IN SWITCH 1:

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NATIVE VLAN 99 CONFIGURATIONS IN SWITCH 2:

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Error:

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/2 (1), with Switch FastEthernet0/1 (99).

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7. Configure a management VLAN and assign an IP address for remote access. Test SSH or Telnet access to the switch..

NETWORK TOPOLOGY:

A computer screen shot of a computer

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ACCESSING VIA TELNET:

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9.You configured VLANs 10 and 20 on your switch and assigned ports to each VLAN. However, devices in VLAN 10 cannot communicate with devices in VLAN 20. Troubleshoot the issue

NETWORK TOPOLOGY:

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VLAN BRIEF OF SWITCH 1

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VLAN BRIEF OF SWITCH 1

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TESTING CONNECTIVITY FROM PC1 TO PC2

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10. Try inter VLAN routing with router

NETWORK TOPOLOGY:

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VLAN BRIEF OF SWITCH 0

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VLAN BRIEF OF SWITCH 1

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TESTING CONNECTIVITY FROM PC1 TO PC2

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11. Implement ACLs to restrict traffic based on source and destination ports. Test rules by simulating legitimate and unauthorized traffic.

NETWORK TOPOLOGY:

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ACL WORK-TESTING:

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ACCESS LIST:

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12.Configure a standard Access Control List (ACL) on a router to permit traffic from a specific IP range. Test connectivity to verify the ACL is working as intended

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NETWORK TOPOLOGY:

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ACCESS LIST:

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13. Create an extended ACL to block specific applications, such as HTTP or FTP traffic. Test the ACL rules by attempting to access blocked services.

NETWORK TOPOLOGY:

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ACCESS LIST:

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14.Try static nat dynamic nat and pat

**-> Static NAT Configuration** (One-to-One Mapping)

enable

configure terminal

interface GigabitEthernet0/0

ip address 192.168.1.1 255.255.255.0

ip nat inside

exit

interface GigabitEthernet0/1

ip address 203.0.113.1 255.255.255.0

ip nat outside

exit

ip nat inside source static 192.168.1.10 203.0.113.10

exit

* **Dynamic NAT Configuration** (Private Pool to Public IP Range):

enable

configure terminal

ip nat pool MY\_POOL 203.0.113.100 203.0.113.110 netmask 255.255.255.0

access-list 1 permit 192.168.1.0 0.0.0.255

ip nat inside source list 1 pool MY\_POOL

exit

* **PAT (Port Address Translation) Configuration** (Many-to-One)

enable

configure terminal

access-list 1 permit 192.168.1.0 0.0.0.255

ip nat inside source list 1 interface GigabitEthernet0/1 overload

exit